

5 What is claimed:

1. A method of deprotecting a hydroxide or amine protected with a group of formula



, wherein R is H or independently the same as Ar, and n is 0 or 1-4, Ar refers to an

10 aromatic or heteroaromatic ring with 5 to 6 ring atoms and one to two heteroatoms selected from O, N or S, which can be substituted with amino, alkanoyloxy, alkoxy,

alkyl, alkylamino, allyl, carboxy, cycloalkyl, halo, haloalkyl, hydroxy, hydroxyalkyl or nitro, or up to one group which is (i) Ar* which is independently the same as Ar

15 except that it is not substituted with a further aryl, (ii) Ar*-alkyl- or (iii) Ar*O-, a ring atom of Ar adjacent to C* can be substituted with -CH₂-, -O-, -NH-, -S(O)_q- or

-P(O)_r-, to form a bridge to a corresponding position on R when R is Ar, q is 0 or 1-2 and r is 0 or 1-2, the method comprising:

contacting the protected hydroxide or amine with an enzyme effective to

remove the protecting group; and

20 recovering the amine.

2. The method of claim 1, wherein the protecting group is a phenylmethyloxycarbonyl group, which can be substituted.

25 3. The method of claim 1, wherein n is 0 when R is H.

4. The method of claim 1, wherein n is 1 where R is the same as Ar.

5. The method of claim 1, wherein the enzyme is obtained from

30 *Sphingomonas paucimobilis*.

6. The method of claim 1, wherein the enzyme is obtained from *Sphingomonas paucimobilis* strain ATCC 202027.

5 7. The method of claim 1, wherein the protected compound is an amine
which is alanine, valine, leucine, isoleucine, proline, 4-hydroxyproline, phenylalanine,
tryptophan, methionine, glycine, serine, homoserine, threonine, cysteine,
homocysteine, tyrosine, asparagine, glutamine, aspartic acid, glutamic acid, lysine,
 α -amino- ϵ -caprolactam (lysine lactam), ϵ -methyllysine, ornithine, arginine, histidine
10 or 3-methylhistidine, or any of the foregoing substituted on an alkyl portion thereof
with hydroxy or alkyl, on an amino with up to one alkyl, or on a phenyl moiety with
alkyl, alkanoyloxy, alkoxy, amino, carboxy, cycloalkyl, halo, hydroxy, Ar* or Ar*O-,
or a derivative of the foregoing forming a portion of a larger molecule via bonds
formed by dehydration reactions with the amine or carboxylic acid moieties, or by
15 carbon-nitrogen bonds formed at the amine moieties.

8. The method of claim 7, wherein the amine is α -amino- ϵ -caprolactam
or α -amino- δ,δ -dimethyl- ϵ -caprolactam, or a derivative thereof.

20 9. A method of resolving a racemic mixture of a compound having a
hydroxyl or amino moiety that is directly bonded to a chiral carbon, the method
comprising:

25 providing a derivative of the compound in which the hydroxide or amine is
protected with a group of formula ArC*(R)H-(CH₂)_n-O-C(=O)- ,
wherein R is H or independently the same as Ar, and n is 0 or 1-4, Ar
refers to an aromatic or heteroaromatic ring with 5 to 6 ring atoms and
one to two heteroatoms selected from O, N or S, which can be
substituted with amino, alkanoyloxy, alkoxy, alkyl, alkylamino, allyl,
carboxy, cycloalkyl, halo, haloalkyl, hydroxy, hydroxyalkyl or nitro, or
30 up to one group which is (i) Ar* which is independently the same as Ar
except that it is not substituted with a further aryl, (ii) Ar*-alkyl- or
(iii) Ar*O-, a ring atom of Ar adjacent to C* can be substituted with -
CH₂-, -O-, -NH-, -S(O)_q- or -P(O)_r-, to form a bridge to a
corresponding position on R when R is Ar, q is 0 or 1-2 and r is 0 or 1-
35 2;

5 contacting the protected compound with an enzyme effective to remove the
protecting group; and
isolating the compound or protected derivative thereof in a composition that is
enantiomerically enriched in the desired enantiomer.

10 10. The method of claim 8, wherein the protecting group is a
phenylmethyloxycarbonyl group, which can be substituted.

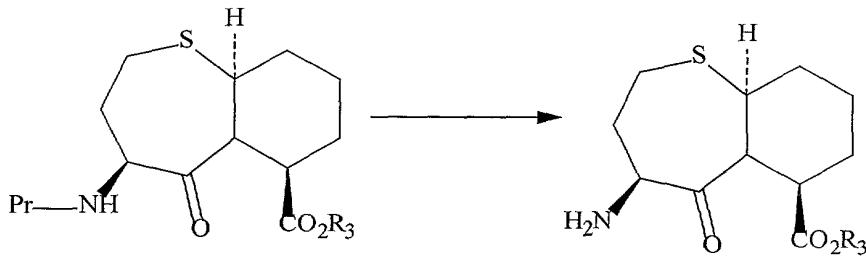
15 11. A method of isolating a bacteria producing an enzyme effective to
remove a protecting group comprising:
growing prospective bacteria on a medium having a growth selective amount
of an amine compound that is protected with a group of formula
$$\text{ArC}^*(\text{R})\text{H}-(\text{CH}_2)_n-\text{O}-\text{C}(=\text{O})-$$
, wherein R is H or independently the same as Ar, and n is 0 or 1-4, Ar
refers to an aromatic or heteroaromatic ring with 5 to 6 ring atoms and
one to two heteroatoms selected from O, N or S, which can be
substituted with amino, alkanoyloxy, alkoxy, alkyl, alkylamino, allyl,
carboxy, cycloalkyl, halo, haloalkyl, hydroxy, hydroxyalkyl or nitro, or
up to one group which is (i) Ar* which is independently the same as Ar
except that it is not substituted with a further aryl, (ii) Ar*-alkyl- or
20 25 (iii) Ar*O-, a ring atom of Ar adjacent to C* can be substituted with
-CH₂- , -O- , -NH- , -S(O)_q- or -P(O)_r- , to form a bridge to a
corresponding position on R when R is Ar, q is 0 or 1-2 and r is 0 or 1-
2; and
isолating bacteria that grow on said medium.

30 12. The method of claim 11, further comprising confirming the
effectiveness of the enzyme by
incubating the bacteria with an amine protected with the protecting group; and
monitoring conversion of the protected amine to the free amine.

5 13. The method of claim 11, wherein the carbamate protecting group is a phenylmethyloxycarbonyl group, which can be substituted.

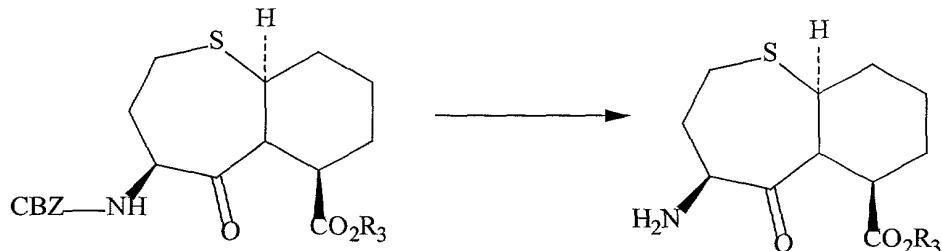
10 14. A collection of two or more bacterial isolates, the isolates isolated by the method of claim 11 using a different amine or a different protecting group.

15 15. The method of claim 1, wherein the contacting effectuates the following reaction:



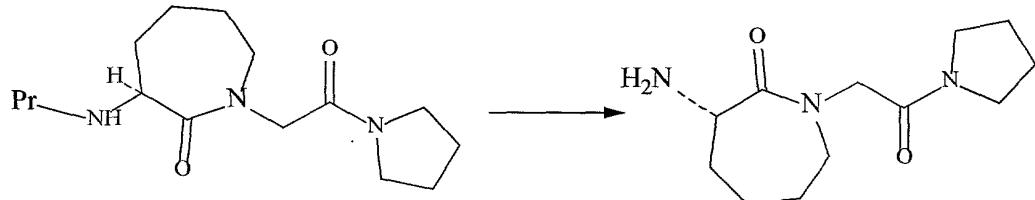
, wherein *Pr*- is $\text{ArC}^*(\text{R})\text{H}-(\text{CH}_2)_n-\text{O}-\text{C}(=\text{O})-$.

15 16. The method of claim 15, wherein the reaction is:



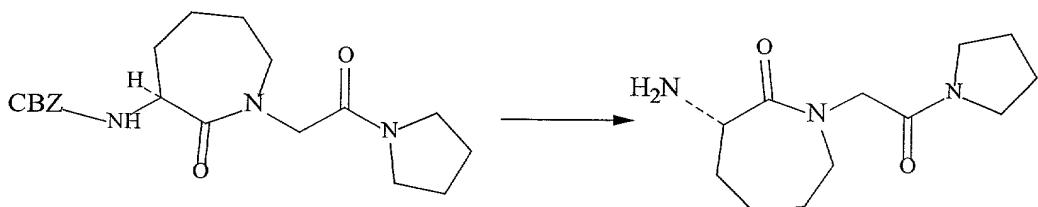
, wherein CBZ- is N-carbobenzyloxy.

20 17. The method of claim 1, wherein the contacting effectuates the following reaction:



5 , wherein Pr- is ArC^{*}(R)H-(CH₂)_n-O-C(=O)-.

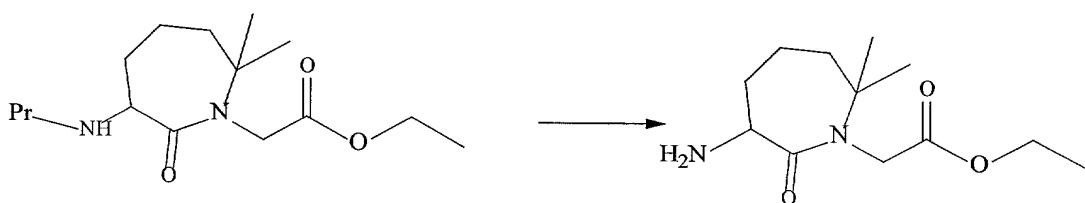
18. The method of claim 17, wherein the reaction is:



, wherein CBZ- is N-carbobenzyloxy.

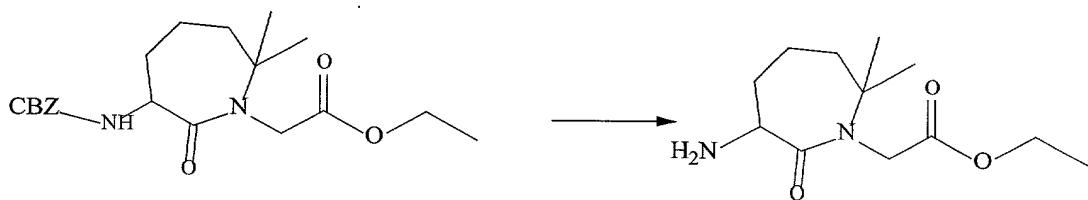
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19. The method of claim 1, wherein the contacting effectuates the following reaction:



15 , wherein Pr- is ArC^{*}(R)H-(CH₂)_n-O-C(=O)-.

20. The method of claim 19, wherein the reaction is:



, wherein CBZ- is N-carbobenzyloxy.

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